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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,583

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Ury Veniaminovich Dikun

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EXAMINER

PARKER, FREDERICK JOHN

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

07/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,583	Applicant(s) DIKUN, URY VENIAMINOVICH	
	Examiner Frederick J. Parker	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1-3-06;4-24-06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
 - (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
 - (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
 - (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
 - (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
 - (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
 - (g) BRIEF SUMMARY OF THE INVENTION.
 - (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
 - (i) DETAILED DESCRIPTION OF THE INVENTION.
 - (j) CLAIM OR CLAIMS (commencing on a separate sheet).
 - (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
 - (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title is too generic.

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3. Applicant is reminded of the proper language and format for an **abstract** of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. the abstract fails to conform with the rules above.

4. The disclosure is objected to because of the following informalities: page 2, line 31, "implies" appears to be a typo; page 4, lines 9-10 do not make sense; throughout the spec, the term "sputtering" as used appears repugnant to the ordinary use of the art-recognized term such that clarification of the process appears necessary, without the addition of New Matter. Page 9, line 6; page 10, l. 22, page 25, and elsewhere, the intended meaning of "sockets" in context is inappropriate and unclear. Appropriate correction is required.

Claim Objections

5. Claims 1-3,8,10,11,13 objected to because of the following informalities: clms 1, 2; it is unclear what is meant by "scanning" in context; clm 3, line 2, "1,2" appears to be an error; is "d - maximum" what is really intended?; claim 11, lines 8,10,11, should "- be an "="? because the expressions are so confusing; clm 13, line 2, , should "- be an "="? because the expressions are so confusing. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 2-4,6-16,19-26 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 2,11; it is unclear which one of the two phase flows is intended on line 2; the overall claims are vague and indefinite because the relationship between “linear velocity of movement”, surface preparation, and velocity of movement are unclear and confused; it is interpreted that the two flows are of substantially equal velocity of movement for examination.
- Claim 3, line 2, it is unclear which one of the two phase flows is intended; the overall claim is vague and indefinite because the expressions are without numeric limits and hence make no sense in context.
- Claim 4, “environment” lacks antecedent basis.
- Claim 6, “removed coating powder particles” lacks antecedent basis.
- Claim 8: “surface processing zone” & “environmental pressure” lacks antecedent basis.
- Claims 9,16; “main material” lacks antecedent basis.
- Claim 10 is vague and indefinite because it is unclear what is meant by “applying the coating....gas” relative to the “gas velocity...flow”. Since the limitation is undiscernible, any similar process will be deemed to meet the limitation.
- Claim 12, “removed layer material” lacks antecedent basis.
- Claim 13 is vague and indefinite because the expressions make no sense since there are no numeric limits.
- Claim 14, “environment” lacks antecedent basis.
- Claim 15, “environmental static pressure” lacks antecedent basis.
- Claim 19 is vague and indefinite because the relationship between the processing zone and window is unclear since there appear to be an infinite number of nozzle axis lines for

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two spray units; the meaning of “socket” and its relation to the apparatus structure is unclear; the meaning of “kinematically interconnected” is indiscernible.

- Claims 20,21,24-26; it is unclear which of the two chambers of the spray units is intended.
- Claims 22,23: “kinematical connection” lacks antecedent basis; further the meaning of the expression is not discernable.
- Claim 22: the meaning of “fixing element”, its relationship to the structure of the apparatus, and its function are unclear.
- Claims 25,26 are vague and indefinite because it is unclear how the process chamber can be pressed or moved along the surface of the article yet still permit a coating process to occur.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1,3-7,9,10 are rejected under 35 U.S.C. 102(b) as being anticipated by Chu US 4552784.

Chu teaches a coating method in which separate and successive gas streams, first containing hard peening particles (to clean/ treat substrate) and the second comprising metal coating particles, the gas flows with entrained particles being “separate two-phase flows” per claims 1,9

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(col. 3, 38- col. 4, 56). The process is conducted in a closed cabinet or chamber from which unused particles are recovered for discarding or reclamation (col. 4, 21-40) per claims 4-7. Per claim 3, since the limitations contain no bounds and the process of Chu anticipates that of the claims, the process of Chu inherently possesses and therefore anticipates the claim as written.

10. Claims 1,3-7,9,10 are rejected under 35 U.S.C. 102(b) as being anticipated by Babecki US3754976.

Babecki teaches in at least one embodiment, to separately apply 2-phase particle-entrained gas flows, one being a peening stream for substrate cleaning, followed by a coating stream comprising metal particles (col. 4, 28-65; col. 5, 39-44; and elsewhere). The process is conducted in a closed cabinet or chamber from which unused particles are recovered for discarding or reclamation (col. 5,10-13) per claims 4-7. unused particles may be recovered and recycled. Per claim 3, since the limitations contain no bounds and the process of Babecki anticipates that of the claims, the process of Babecki inherently possesses and therefore anticipates the claim as written.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2,8,11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu or Babecki, each of which is cited for the same reasons previously discussed, which are incorporated herein.

Specific velocities of the 2-phase sprays are not cited, but Chu on col. 3, 48-61 as well as Babecki col. 2, 33-54, and elsewhere, teach to optimize pressure/ flow conditions to achieve a desired flow rate, substrate pretreatment, etc without limitation and hence the parameters of claim 2 would have been determined by routine experimentation. Further both references recognize the need to do so for a desired outcome, e.g. cleaning, effecting depressions, hardening, blasting, coating properties, etc. Thus the reference meets the limitations and unbounded expressions of claims 11,13. It would have been apparent and obvious that surface treating peening particles of silica are substantially harder than metal per claim 12. Reducing pressure in the work closet or chamber would have been an obvious means for removal of unused powder particles, within the purview of one of ordinary skill.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chu or Babecki by separately optimizing the gas-particle flows and using a reduced pressure relative to ambient to provide the recognized benefits previously cited.

13. Claims 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rocheville US 3100724.

14. Examiner's Note: this rejection is made based upon reasonable interpretation of indefinite claims, as shown under 35 USC 112 rejections.

Rocheville teaches a gas-particle apparatus comprising a supersonic nozzle for jetting the particle-entrained gas stream 5; mixing chamber 17 connected thereto via 11; means 18,20 to remove and recirculate unused powder; window means 2; the entire apparatus is contained in housing 1 which contains the powder and necessarily reduces noise relative to no housing. While a single chamber is show, the use of dual adjacent or successive chambers for successive process steps is a notoriously obvious variation within the purview of one of ordinary skill. The combination of familiar elements according to known methods is generally obvious when it does no more than yield predictable results, KSR, 127 Sup. Ct. at 1739, 2007. The apparatus is inherently capable of carrying out both the cleaning and coating operations given the similarities in apparatus structure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Rocheville by positioning adjacent chambers so that two successive steps comprising particle-entrained pressurized gas flows can be utilized in sequence in a single processing unit to improve efficiency and cost-effectiveness.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Frederick J. Parker
Primary Examiner
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